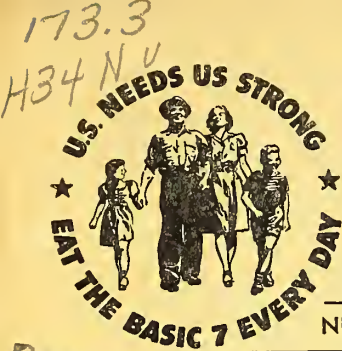


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## QUARTERMASTER FOOD AND CONTAINER INSTITUTE FOR THE ARMED FORCES

The mission of the Quartermaster Food and Container Institute for the Armed Forces, among other things, is to provide the research and development necessary for the foods, rations, and containers required by the Armed Forces.

Military food and rations are distinguished from civilian products by the necessity for special attributes of stability, acceptability, nutritional adequacy, and utility. Such essential military problems as the design of arctic rations, survival rations for Ground Force troops and personnel from ditched planes, in-flight rations for use in new types of planes, and adaptation and utilization of frozen precooked foods depend for development or improvement on the fundamental investigations now being conducted by the Institute under the research and development program of the Quartermaster General.

The Institute's fundamental research program, according to George Gelman, Technical Director of the Institute, consists of seven major areas:

Food Research Survey and Planning. A comprehensive survey of the major food research programs now operative in colleges, universities, Government experiment stations, industrial laboratories, and foundations throughout the Nation is being conducted through a grant to the National Research Council. The program will insure that food research information on a Nation-wide basis is not only available to the Armed Forces but to the entire country. In addition a survey is being made of the raw material and chemical requirements of the food-processing industries, with particular reference to those materials that must be imported or are not readily available.

Product Development. Product development is concerned with the improvement of texture, flavor, appearance, acceptability, and storage qualities of existing food products used in military feeding and with the development of new products.

Much of the investigation is accomplished in collaboration with industrial organizations throughout the United States.

Ration Development. To meet special requirements where kitchen facilities are unavailable and soldiers are forced to consume their food singly or in groups, rations must be provided. Rations must not only be easy and convenient to use in the field, but adapted to special conditions. Thus, there are rations suited for use in combat, for survival after isolation from the main action, for use in the Arctic, and other situations. Each of the components of these rations must be sufficiently stable to withstand long storage and to retain its palatability and nutritional adequacy.

Container Research and Development. The object of container research is to insure that products are adequately protected from the hazards of handling and adverse conditions of storage, from the point of origin to the point of use.

Ration Stability. Research into methods of insuring the stability of food under extreme climatic and environmental conditions is required because food for military use must be shipped long distances and handled and stored under adverse conditions. The problems of greatest concern are the oxidation of fats and fatlike substances; discoloration through losses of natural pigments and development of ill-defined pigments, such as those derived from "browning"; texture alterations resulting from changes in starch, pectin, and proteins; losses in vitamin and amino acid availability; and those due to the action of microbes which may result in repulsive or toxic products.

Ration Acceptability. Acceptability of foods and rations is of utmost importance in military feeding programs. Differing food habits; psychological factors such as anxiety, tension, fear, and monotony, as well as climatic and military conditions cause difficulties not found in civilian feeding.



Ration Nutrition. Nutritional and physiological adequacy are fundamental factors underlying the design of rations. Research is under way in many institutions throughout the country to determine the nutritional needs of troops under assault and in air and ground combat, and even the feeding requirements of troops prior to assault. Studies include the effects of both high and low temperatures on animals and their nutritional needs; the effects of exposure to noxious stimuli upon physiological needs; the effect of temperature on caloric output; and the relation between appetite and nutritional needs, sense of smell, and certain drugs.

#### Research Planning Council

To provide technical advice, coordination, and general guidance to the Institute, a Research Planning Council has been set up. Members represent wide geographical distribution as well as all the sciences involved in food and container research. The Council consists of a Scientific Liaison and Advisory Board, a Committee on Food Research, a Committee on Container Research, and the Institute staff. The Scientific Liaison and Advisory Board is composed of about 190 recognized specialists in the field of food and container research. This board studies the major problems of food and container research and recommends the programs best suited to solving them. In addition their recommendations as to placing research contracts, need for conferences at various stages of research progress, and advisability of surveying the literature of special fields, are of great usefulness.

The other two committees function in their respective fields as reviewing and advisory agencies. Their influence is direct since, in addition to being members of the Advisory Board, they are closely identified with the research conducted under the research and development projects sponsored through the Institute.

The Institute staff participates in the work of the Research Planning Council and acts as the executive force in the planning program.

#### FURTHER PROGRESS ON CORN MEAL ENRICHMENT

In the June NNL we reported that nine Alabama counties had started corn meal enrichment programs. A report dated June 30 states that in 30 Alabama counties 267 enrichment feeders have been installed. Millers have purchased 23,600 pounds of enrichment mixture.

P. O. Davis, Director of the Alabama Extension Service, says, "Excellent progress due to teamwork across the board for six months."

#### FAIR TIME IS EXHIBIT TIME

County and State fairs offer unexcelled opportunities for presenting information on nutrition. Exhibits, films, and printed materials find receptive audiences.

"Educational Exhibits, How To Prepare and Use Them," which was written for Extension workers, contains practical directions for many types of exhibits. Copies have been sent to Extension people. Others may obtain them from the Government Printing Office, Washington 25, D. C., for 25 cents, by asking for USDA Miscellaneous Publication 634.

Another helpful publication is "How Your REA Co-op Can Use Exhibits To Help Tell Its Story." It is available from the Rural Electrification Administration, USDA, Washington 25, D. C.

In January 1947 State chairmen were sent a mimeographed sheet "There's a Barrel of Fun in Good Eating," describing how an exhibit featuring the Basic 7 was set up. The exhibit consisted of a barrel divided into seven segments. Each segment contained foods representative of one of the food groups. Panels provided space for explanatory legends.

You can obtain the mimeographed description and a photographic print of the exhibit by writing Nutrition Programs, Food Distribution Programs Branch, PMA, USDA, Washington 25, D. C.

#### NEWS OF STATE COMMITTEES

ILLINOIS.—The program for the State nutrition spring conference on April 30-May 1 at Springfield included talks on recent developments in research and on the outlook for food supplies. One afternoon was devoted to reports of activities in counties, schools, and clinics and to action programs. The conference ended with a discussion of methods of presenting nutrition information to lay groups and of translating the conference into action.

The Nutrition Workshop, held at the University of Illinois on June 14-18, featured two sections: (1) Methods of presenting nutrition information and developing materials; and (2) responsibility of community organizations in nutrition programs. In the first section some posters and a circular were prepared. A questionnaire was developed for use in learning the extent to which terms are understood in a community.



The second section discussed the problem of the unconcerned people and how to get them concerned and the steps necessary to organize a community for action. Informative talks and laboratory tours rounded out the program.

To evaluate the workshop each participant was asked to give his reactions. The group agreed that the workshop was worth-while and should be repeated. They decided that the most important value of the workshop lay in the opportunity it gave for meeting and working with people from other agencies, and the experience of discussing a problem freely and arriving at a general principle. They also found valuable the refresher course in nutrition, the help in presenting information in a simple manner, and the inspiration gained through this experience. According to Secretary Jessie E. Heathman, the Committee feels that this workshop has been an outstanding project and one which may lead to a permanent organization of nutrition workers in Illinois.

CHICAGO, ILL.—On April 28 about 200 persons heard Dr. Otto A. Bessey of the University of Illinois College of Medicine discuss new chemical methods which he and his colleagues have developed for the determination of nutritional status, according to the News Letter of the Chicago Nutrition Association. This is the second annual lecture on nutrition offered by the Association for all persons interested professionally in the nutritional status and health of the people in the Chicago area.

Dr. Bessey stressed the need for an objective, practical, and precise means of determining nutritional status and pointed out that better methodology, by leading to more exact science, would resolve many of the existing conflicting opinions and exaggerated claims.

Some of the methods for determining nutritional status are physical findings, performance, dietary histories, and chemical methods. Physical findings are confined almost entirely to cases of drastic malnutrition where deficiency symptoms are evident, and are of little value in recognizing cases of borderline nutrition adequacy. The performance method is not objective nor specific. Dietary histories, while useful for some purposes, lack precision and objectivity. Chemical methods, on the other hand, are objective, potentially practical, and are based on physiological processes. Precise chemical methods have recently been developed without the disadvantages of earlier methods. Suf-

ficient blood for the tests is collected from a single finger prick.

Determinations for carotene and vitamin A, ascorbic acid, total protein, serum iron, riboflavin, phosphatase, hemoglobin, niacin, and thiamine can be made. Many properties of the nutrients, such as color and fluorescence, are utilized in the new chemical procedures. After studying several thousand school children, Dr. Bessey concludes that chemical analysis offers an accurate and practical means of determining nutritional status.

Before the lecture, Chairman Ethel Austin Martin pointed out that objective measurements of nutritional status greatly facilitate the problem of getting exact evidence of the kind of food practices that are at fault in a given community and show the nutritionist where to start in a program of nutrition education. They also can present a graphic and convincing picture of the necessity for corrective nutritional measures.

LOUISIANA.—Superintendents of schools; teachers of agriculture and home economics; county and home demonstration agents; members of State departments of education, health, and public welfare; home economists in business; school lunchroom supervisors; and college professors attended the annual meeting of the State nutrition committee May 21 and 22 at Lafayette, with Chairman Marie Louise Comeaux presiding.

Friday afternoon was devoted to a discussion of the Acadia Parish cooperative program; Saturday morning to "Feeding Adequately Under a High Price Regime." Herbert Hamilton of the Southwestern Louisiana Institute spoke on "Economic Aspects of the Food Problem" and W. L. Roark, county agent for Rapides Parish, on "Nutrition from the Soil."

Clyde Mobley, State Supervisor of Home Economics, was elected new chairman.

ARKANSAS.—Progress on an educational program stressing adequate, low-cost protein was reported at the July 10 meeting of the State Consumer-Nutrition Committee. Attending were representatives of the Extension Service, University of Arkansas, State Teachers Colleges, City Health Department, American Red Cross, Farmers Home Administration, Arkansas Power and Light Company, school lunch service, and vocational home economics education.

These representatives reported that their activities had included—  
..Compiling recipes for meat substitutes and extenders and low-cost protein



dishes, including Dr. Sure's Dairy Food, and estimating the cost of such dishes. They served them in school lunch programs, high-school and adult classes, and in community, club, and church meetings.

..Stressing the importance of good protein in classes of adults, nurses, expectant mothers, and high-school students, and with clubs or individual families.

..Helping families produce, preserve, and prepare adequate family food.

..Holding conferences with teachers to help them plan with high-school students and adults how to produce and prepare adequate food for families.

..Demonstrating to school lunch workers how to properly prepare dishes using peanut butter, nonfat dry milk solids, and dried eggs.

The committee suggested that all agencies emphasize diets for periods of stress, such as old age, pregnancy, and growth. It will continue to promote high protein diets from the lower-cost foods, according to Chairman Alma Keyes.

Mrs. Barbara McDonald was elected chairman for next year. She is to compile a list of representatives of all State agencies or groups interested in nutrition education with the idea of asking them to become members.

INDIANA.—The State Nutrition Council has worked all year on school lunch problems, trying to get agencies and organizations to see that this is a cooperative community problem, Chairman Cecilia Schuck says.

A workshop for elementary-school teachers and school lunch personnel was held at Indiana State Teachers College June 21 to July 3. A series of school lunch institutes will be held during the year.

The Council made the following suggestions for conducting school lunch programs. It feels that lasting results and continued progress of the school lunch program is attained only when the local people assume responsibility and when they participate to the greatest extent possible.

A demonstration started in a locality where there is interest will arouse interest in surrounding communities. Key people invited to take part will take back inspiration to their own communities. Local people should be made acquainted with professional services that are available to assist with school lunches. An institute for local leaders from a number of communities to inform

them about the principles of the program will enable them to cope with their special problems. After an institute, a meeting should be held to evaluate the program and the results. Also an effective follow-up should be carried out.

The Council suggests that the school lunch program might be stimulated by studies comparing the health and efficiency of children in schools having a good school lunch with those of children having no school lunch.

The Council further calls attention to the fact that particular groups, such as cooks and other school lunch workers, recognize the need to exchange ideas with others carrying on the same work, and they often form their own organizations. Cooks are often impressed with certificates for attendance at a course of instruction. They appreciate being asked to demonstrate at an institute something in which they excel.

A school lunch committee can best assist the program by (1) preparing a letter for county superintendents giving suggestions for a school lunch institute, and (2) preparing a check sheet to find out what local problems exist and which local people are qualified to help. This information would be sent to local committees explaining that it is only suggestive and should be modified to meet their needs.

#### NEW MATERIALS

"People and Potatoes" summarizes the results of a Nation-wide survey of consumer preferences in regard to potatoes, made in the fall of 1947 by the Bureau of Agricultural Economics. Copies will be sent you as soon as they are received from the printer.

"Use Plentiful Potatoes," an 8-page folder containing potato recipes, has been reprinted and copies are available from PMA Information Branch, USDA, Washington 25, D. C. A copy was sent you recently.

Sincerely yours,



M. L. Wilson, Chief  
Nutrition Programs



W. H. Sebrell, Consultant